

Verification of Translation

I, Anna Güttel, residing at Oppelner Str. 19, 10997 Berlin, Federal Republic of Germany, hereby declare that I am conversant with the English and German languages and that I am a competent translator thereof. I declare further that, to the best of my knowledge and belief, the forgoing is a true, faithful, complete and accurate translation of PCT International Application PCT/DE2004/002731 as filed on December 14, 2004 in the name of Conti Temic microelectronic GmbH, the original of which application has been submitted to me in the German language.



Anna Güttel
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IAP11 Rec'd PCT/PTO 24 JUL 2006**An electronic device and a procedure for bonding an electronic device**

The invention relates to an electronic device in accordance with the preamble of claim 1. Furthermore, the invention relates to a procedure for bonding an electronic device in accordance with claim 5.

An electronic device in accordance with the preamble of claim 1 is known from prior public use. There, the electronics housing is supported on the base plate by a supporting rib in the vicinity of the bond contact bearer. Through processing tolerances, in particular through unevennesses in the base plate or supporting rib, it is possible that the electronics housing is not in contact with the base plate via the supporting rib, at least in certain areas. As a result, in these areas, the electronics housing is not supported in the vicinity of the bond contact bearer. Due to this inadequate support, the position of the bond contact bearer is only imprecisely defined. The insufficient support of the bond contact bearer results in its tendency to vibrate during bonding. In order to ensure a bond connection, it must be possible to set a second, so-called "secure bond", which itself requires additional space. For this reason, the bond contact bearers must be relatively large in size, in order to guarantee secure bonding.

It is therefore the object of the present invention to further develop an electronic device of the above-mentioned type in such a manner, that greater security in the production of a bond connection is provided.

This object is achieved according to the invention by means of an electronic device with the features described in the characterising part of claim 1.

The supporting body according to the invention ensures that the bond contact bearer is supported in a pretensioned state on the base plate. The at least one bond contact bearer is then securely supported by the supporting body, so that its position is clearly defined. Due to the pretensioned support, in particular the tendency of the at least one bond contact bearer to vibrate is avoided. As a result, it is possible to work with more compact bond contact bearers. If appropriate, a second, so-called secure bond is not required, which makes the design of the bond contact bearer even more compact. If several adjacent bond contact bearers are present, the bonding grid can therefore be smaller, which leads to a more compact bond area in the electronics housing.

A projection in accordance with claim 2 results in secure pretensioning without high production costs.

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A supporting body in accordance with patent claim 3 enables pretensioned support even with alternating combinations of base plates and electronics housings, adapting the size of the supporting body to the electronics housing on the one hand and to the distance between the bond contact bearer and the base plate on the other. The mechanical connection between the supporting body and the electronics housing can in particular be created by means of latching.

A supporting body in accordance with claim 4 can, insofar as it is realised as a ring, be simply aligned to the electronics housing. The realisation of the supporting body as a plurality of projecting individual segments enables a high degree of flexibility in the design of the supporting body. An adaptation to a very wide range of geometries in the base plate on the one hand, and the electronics housing on the other, is possible. The individual segments can in particular be latched onto the electronics housing, which guarantees a good position definition of the supporting body.

A further object of the invention is to present a procedure for the secure provision of a bond connection.

This object is achieved according to the invention by a procedure with the features described in patent claim 5. The advantages of the procedure according to the invention correspond to those which are described above in connection with the electronic device according to the invention.

An exemplary embodiment of the invention will be described below in greater detail with reference to the drawing, in which:

Fig. 1 shows a perspective view of an electronic device; and

Fig. 2 shows a section corresponding to line II – II in Fig. 1.

Fig. 1 shows a perspective view of an electronic device 1, which is designed to be contacted with a further electronic component, in this case, a chip. The electronic device 1 comprises a base plate 2, which supports an electronics housing 3. The base plate 2 is glued to the electronics housing 3. The electronics housing 3 is supported on the base plate 2 by, for example, a supporting rib 4. The latter is arranged in the vicinity of a plurality of bonding tongues 5 on the electronics housing 3. The bonding tongues 5 act as bond contact bearers to establish the electrical contact between the electronics housing 3 and the additional electronic component, not shown in the drawing.

The bonding tongues 5 rest on the base plate 2 via a supporting body 6. The latter is designed as a peripheral supporting frame in the form of a ring which runs around the periphery in an approximately rectangular form which lies on the base plate 2. The supporting body 6 is a component which is separate from the base plate 2. The height of the supporting body 6 above the base plate 2, i.e. its projection above the base plate 2, is greater than the distance between the bonding tongues 5 and the base plate 2. This excess dimension is very slight, and causes the supporting body 6 to exert a pretension force onto the bonding tongues 5 which it supports.

When the electronic device 1 is bonded with bond contact bearers from the additional electronic component, the procedure is as follows: the supporting body 6 is mechanically connected, e.g. latched, to the electronics housing 3. Then, the electronics housing 3 is positioned onto the base plate 2 and glued to it. After this connection stage, the supporting body 6 exerts a pretension force onto the bonding tongues 5. Then, a bond connection is produced between the bonding tongues 5 of the electronics housing 3 and a further bond contact bearer of at least one additional component.

Alternatively, the supporting body can be designed as a plurality of individual segments which project above the base plate 2, i.e. it can be designed from several individual supporting segments, which are latched or snapped onto the electronics housing 3.